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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,841	02/08/2006	Francesc Dalmases	DE030284	7341

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EXAMINER	
NGUYEN, LEON VIET Q	
ART UNIT	PAPER NUMBER
2611	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/567,841	DALMASES ET AL.	
	Examiner	Art Unit	
	LEON-VIET Q. NGUYEN	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to communication filed on 8/19/09. Claims 1-8 are pending on this application.

Response to Arguments

2. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Park (GB2331207A) in view of Lee et al (US20030108089) and Rice (US20020172260).

Re claim 1, Park teaches a method for encrypting a digital data stream in a transmission system that uses orthogonal codes for the modulation (page 1 lines 14-21), the method comprising:

constructing a k^{th} connection (sources 9a-9c in fig. 1) for a k^{th} digital data stream (D0-Dm in fig. 1) by a k^{th} transmitter (transmitter 17 in fig. 1),

mixing (mixers 11a-11c in fig. 1) the digital data stream of the transmitter (D0-Dm in fig. 1) with a spreading code that is assigned to this k^{th} connection (OC(0)-OC(m) in fig. 1, page 1 lines 14-21. Walsh and Hadamard codes are known to be used as spreading codes),and

producing a transmission signal is produced through the mixing (the output of mixer 11a-11c in fig. 1, page 1 lines 20-22).;

wherein the degree of encryption of the k^{th} digital data stream is increased during the k^{th} connection (page 4 lines 4-6).

Park fails to teach assigning different spreading codes from a defined set and allocation of a sequence for the application of the different spreading codes and/or a hop interval. However Lee teaches assigning different spreading codes from a defined set (¶0031) and allocation of a sequence for the application of the different spreading codes (¶0031 and ¶0036).

Therefore taking the combined teachings of Park and Lee as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Lee into the method of Park. The motivation to combine Park and Lee would be to minimize correlation between wideband and narrowband signals (¶0029 of Lee).

Park also fails to teach wherein the spreading codes are produced decentrally. However Rice teaches a transmitter (fig. 9) which assigns spreading codes which are

externally generated (¶0107). Externally generated is interpreted to be the same as decentralized.

Therefore taking the combined teachings of Park and Rice as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Rice into the method of Park. The motivation to combine Park and Rice would be to ensure privacy (¶0106 of Rice).

Re claim 2, the modified invention of Park teaches a method characterized in that a permutation function (page 3 lines 1-4 of Park, the hopping pattern) defines the sequence of the application of the content of a set of spreading codes (page 3 lines 1-4 of Park, the orthogonal codes) by stating the position (fig. 4 of Park, since there is a finite set of orthogonal codes it would be obvious to state the position of each code).

Re claim 5, the modified invention of Park teaches a device for carrying out a method as claimed in claim 1 characterized in that the device has a first code generator (page 3 lines 1-4 of Park, the first hopping orthogonal code generator) that creates the respectively current spreading code (page 3 lines 1-4 of Park, orthogonal codes).

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Falconer et al (US5204874) in view of applicant's admitted prior art (hereby referred to as AAPA) and Rice (US20020172260).

Re claim 3, Falconer teaches method for encrypting a digital data stream that is to be transmitted in a transmission system (col. 6 lines 50-58), characterized by the steps:

communicating an encryption key (encryption keys are well known in the art and widely used in wireless communications, see col. 1 lines 43-50) and thus:

establishing of a permutation function (col. 21 lines 57-60, the 16 by 6 matrix) that defines a sequence of the application of the content of a set of spreading codes (col. 21 lines 60-67, the locations of each Walsh code are known),

establishing of a set of spreading codes (col. 21 lines 57-60, the 96 Walsh codes),

and/or establishing a hop interval,

wherein the establishing a permutation function, the establishing a set of spreading codes, and/or establishing a hop interval can be carried out in any order (it would be obvious to perform the steps above).

Falconer fails to teach wherein after the connection set-up, necessary parameters for the transmission and recovery are transmitted. AAPA teaches establishment of spreading codes after connection start-up (page 2 lines 7-8). The

spreading codes are interpreted to be necessary parameters. AAPA also teaches that the transmitted data is encoded with the spreading codes (page 2 lines 9-12).

Therefore taking the combined teachings of Falconer and AAPA as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of AAPA into the method of Falconer. The motivation to combine AAPA and Falconer would be to ensure that transmitted data can be decoded only by the authorized recipient (page 2 lines 10-12 of the background), thus ensuring proper security.

Falconer also fails to teach wherein the spreading codes are produced decentrally. However Rice teaches a transmitter (fig. 9) which assigns spreading codes which are externally generated (¶0107). Externally generated is interpreted to be the same as decentralized.

Therefore taking the combined teachings of Falconer and Rice as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Rice into the method of Falconer. The motivation to combine Falconer and Rice would be to ensure privacy (¶0106 of Rice).

4. Claims 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al (US5394433) in view of Falconer et al (US5204874) and Rice (US20020172260).

Re claim 4, Bantz teaches a method for encrypting a digital data stream in a transmission system, characterized by the execution of a first permutation procedure which contains a loop with the following steps:

setting of an interval to "1" (block 194 in fig. 16, the starting value of the interval is considered arbitrary);

waiting for the end of a predefined hop interval (block 198 in fig. 16);

increasing the interval by the value 1 (block 208 in fig. 16);

carrying out a comparison (block 210 in fig. 16), wherein alternatively the following takes place:

if the comparison has a positive result (block 210 in fig. 16, i != J): resetting of the interval to "1" (the loop resets after block 204 to set i=0. The starting value of the interval is considered arbitrary);

if the comparison has a negative result (block 210 in fig. 16, i=J): equating the current spreading code with the spreading code stipulated by the permutation function (212 in fig. 16, col. 14 lines 62-64. The hopping patterns are related to spreading codes).

Bantz fails to teach whether the current value of the interval is greater than the total number of the elements of a permutation function which states the positions of the spreading code of a set of spreading codes that is to be used for encrypting the digital data stream. However Falconer teaches elements of a permutation function (col. 21 lines 57-60, the 16 by 6 matrix) which states the positions of the spreading code of a set

of spreading codes (col. 21 lines 60-67, the locations of each Walsh code are known). One of ordinary skill in the art would have found it obvious to use this comparison in block 210 of fig. 16 as taught by Bantz. Furthermore the loop implementation is one of a plurality of design options one skilled in the art could choose from when seeking to implement a method to sequentially apply the spreading codes according to the given permutation function.

Therefore taking the combined teachings of Bantz and Falconer as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Falconer into the method of Bantz. The motivation to combine Falconer and Bantz would be to enhance security of the communication channel (col. 6 lines 50-58 of Falconer).

Bantz also fails to teach wherein the spreading codes are produced decentrally. However Rice teaches a transmitter (fig. 9) which assigns spreading codes which are externally generated (¶0107). Externally generated is interpreted to be the same as decentralized.

Therefore taking the combined teachings of Bantz and Rice as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Rice into the method of Bantzr. The motivation to combine Falconer and Rice would be to ensure privacy (¶0106 of Rice).

Re claim 6, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 4. It would be obvious and necessary to have a method of decoding the encoded digital data stream of claim 4.

Re claim 8, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claims 4 and 6. It would be obvious and necessary to have a system to perform the method as claimed in claims 4 and 6.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al (US5394433), Falconer et al (US5204874) and Rice (US20020172260) in view of Park (GB2331207A).

Re claim 7, the modified invention of Bantz fails to teach a device characterized in that the device has a second code generator that produces the current spreading code.

However Park teaches a device characterized in that the device has a second code generator that produces the current spreading code (element 40 in fig. 2B of Park).

Therefore taking the combined teachings of Bantz, Rice and Falconer with Park as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the feature of Park into the method of Bantz,

Falconer and Rice. The motivation to combine Park, Rice, Falconer and Bantz would be to enhance security of the encrypted data (page 4 lines 4-6 of Park).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON-VIET Q. NGUYEN whose telephone number is (571)270-1185. The examiner can normally be reached on Monday-Friday, alternate Friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon-Viet Q Nguyen/
Examiner, Art Unit 2611

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611